Effects of Various Frequencies and Concentrations of Stimulation on Performance of Some *Hevea* Clones in Cambodia

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INTRODUCTION

Yield stimulation offers opportunities for reducing frequency of tapping from high frequency tapping (HFT) to low frequency tapping (LFT).

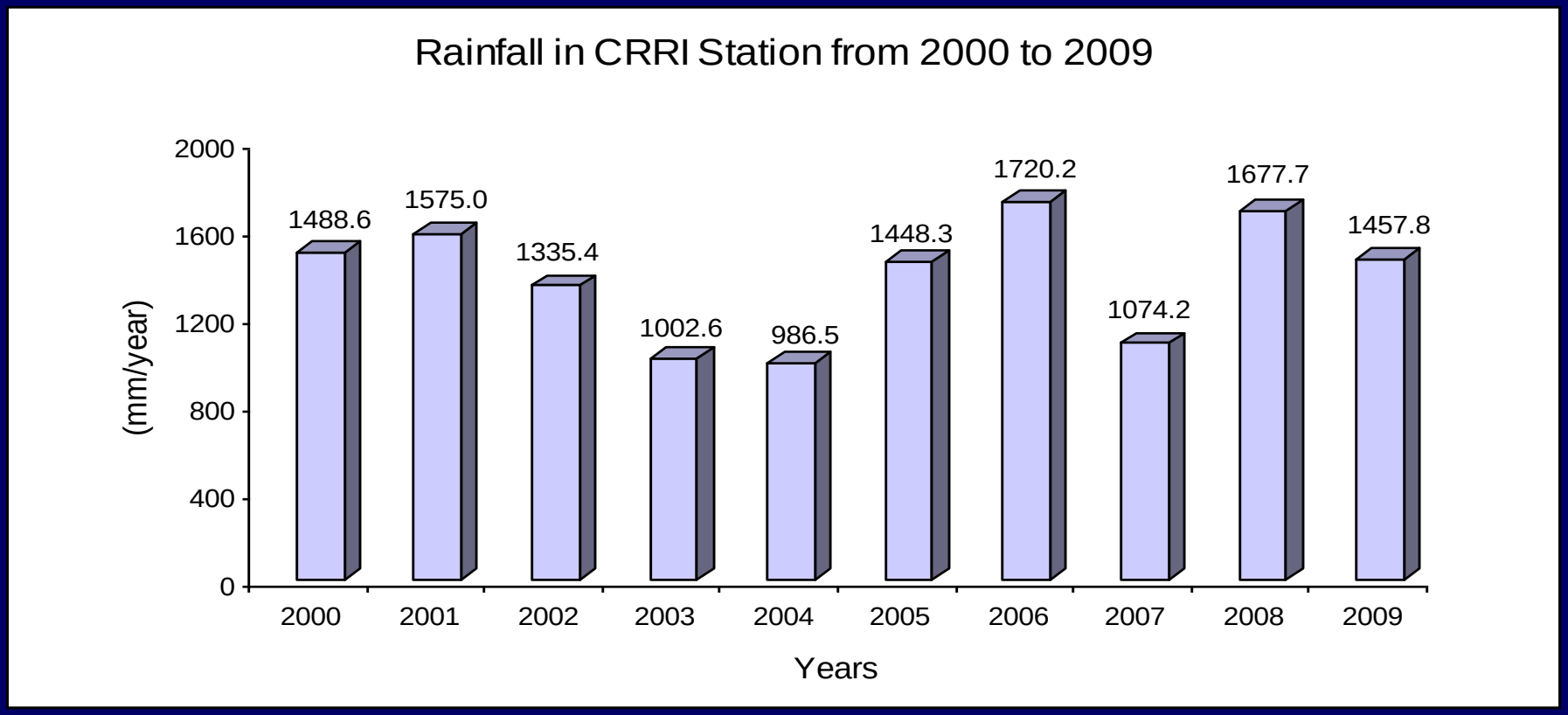
Intensity of stimulation was modulated according to clonal characteristics (Serres *et al.*, 1988, Jacob *et al.*, 1989, Gohel *et al.*, 1995 and 1996, Lacote *et al.*, 2010).

In Cambodia, the S/2 d3 tapping system with stimulation has been used in routine.

Cambodian Rubber Research Institute (CRRI) has been developing research on tapping system to evaluate the influence of stimulation on yield with given low frequency tapping S/2 d4.

OBJECTIVE

To investigate the effects of various frequencies and concentrations of stimulation on performance of clones GT 1, RRIM 712 and IRCA 230 in Cambodia.



Rainfall recorded over ten years from 2000 to 2009 in Experimental Station of CRRI

MATERIALS AND METHODS

1. Clones : GT 1, RRIM 712 and IRCA 230
2. Tapping panels : BO-1
3. Location : Experimental Station of CRRI.
4. Design of experiment : RCBD
5. Tapping systems : S/2 d4 7d/7
6. Number of treatments : 4 (T0, T1, T2 and T3)
7. Number of replications : 4
8. Plot size : 120 trees per plot for clone GT 1
   : 108 trees per plot for clone RRIM 712
   : 90 trees per plot for clone IRCA230

MATERIALS AND METHODS

- Tapping systems and number of treatments are:

  T0 : S/2 d4 7d/7 ET 2.5% Pa(1) 4/y (control)

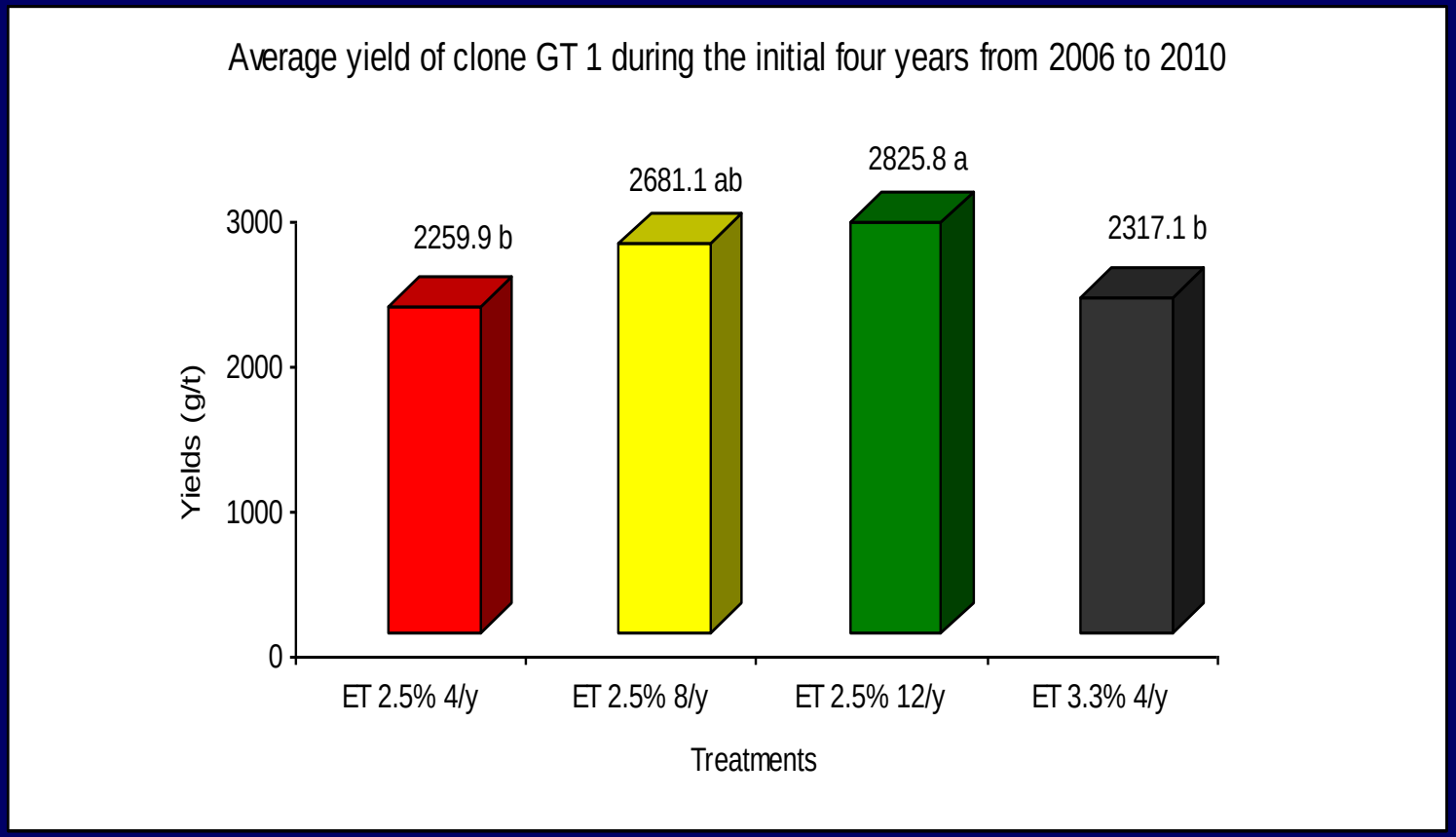
  T1 : S/2 d4 7d/7 ET 2.5% Pa(1) 8/y

  T2 : S/2 d4 7d/7 ET 2.5% Pa(1) 12/y

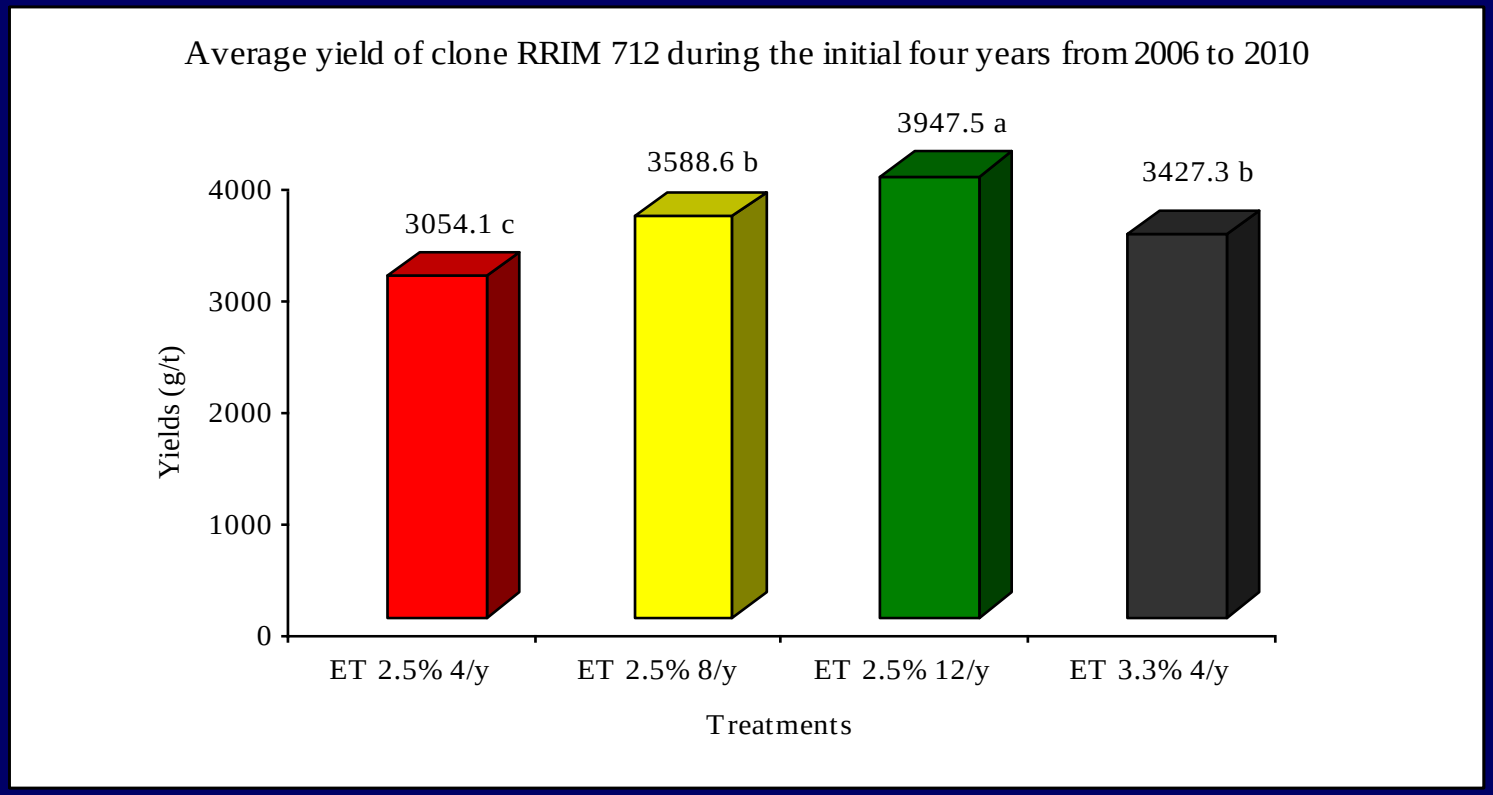
  T3 : S/2 d4 7d/7 ET 3.3% Pa(1) 4/y

RESULTS

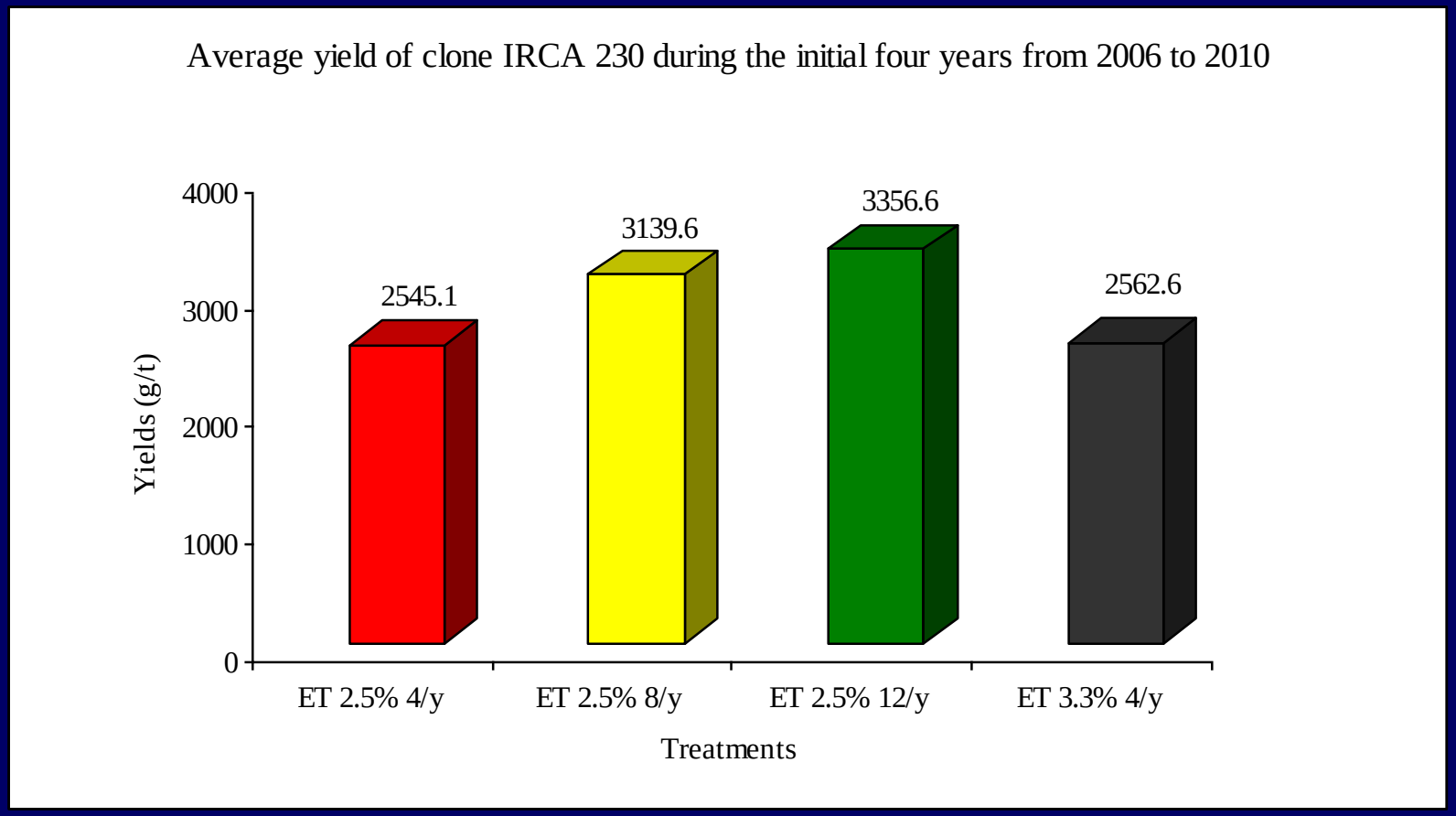

IRAE 03
CLONE: GT1
YIELD POTENTIAL OF TAPPING SYSTEM D/3
.Planting date: June,1997
.Opening date: March ,2004
. Area: 3.125ha
.Planting distance: 6mx3m=555 trees /ha
.Number of tree per plot= 100 trees
.Experimental design: RCBD
. 4Treatments with 3 replications



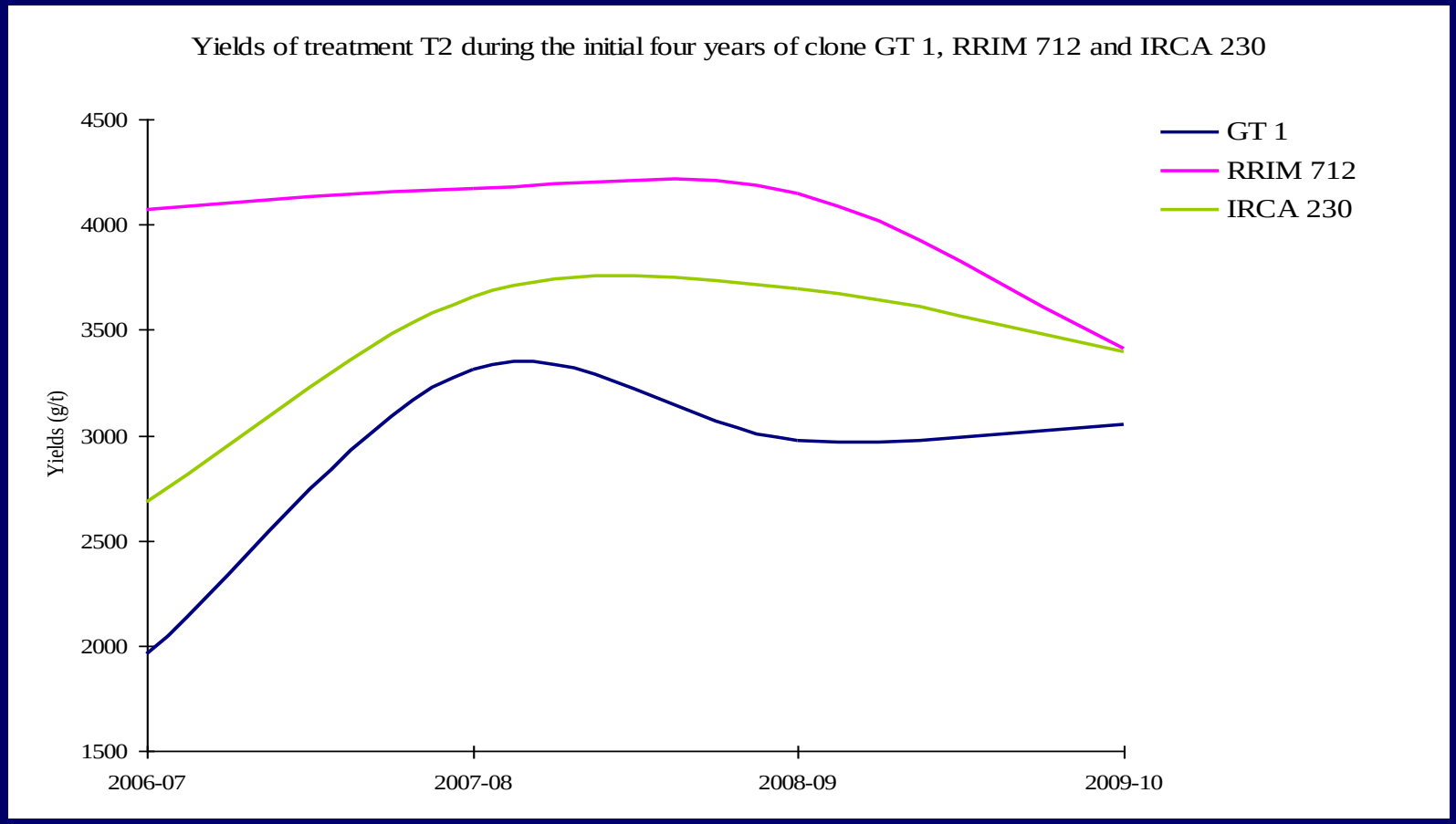
Average yield (g/t) of clone GT1 increased with intensity of stimulation frequency



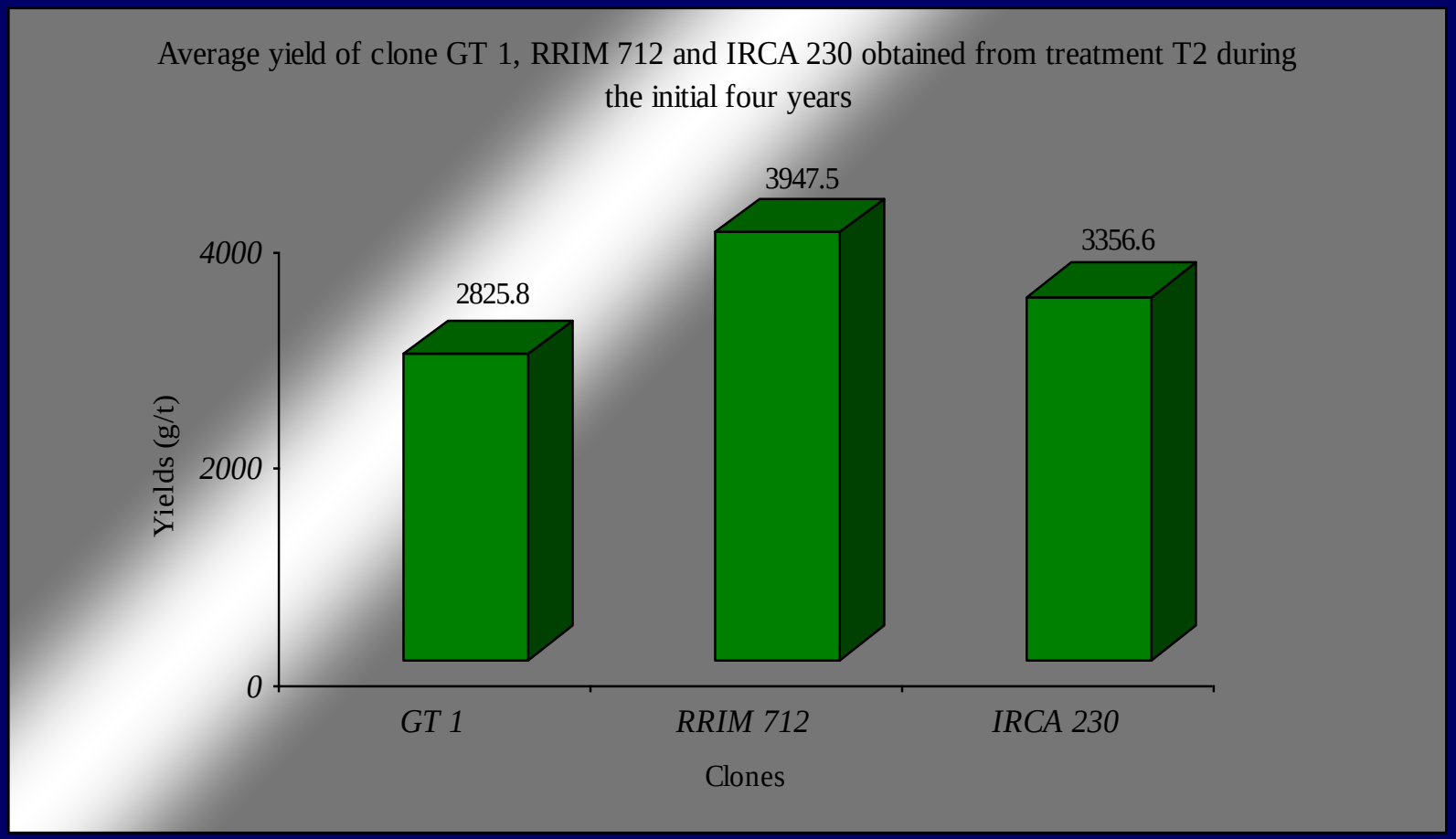
Average yield (g/t) of clone RRIM 712 increased with intensity of stimulation frequency



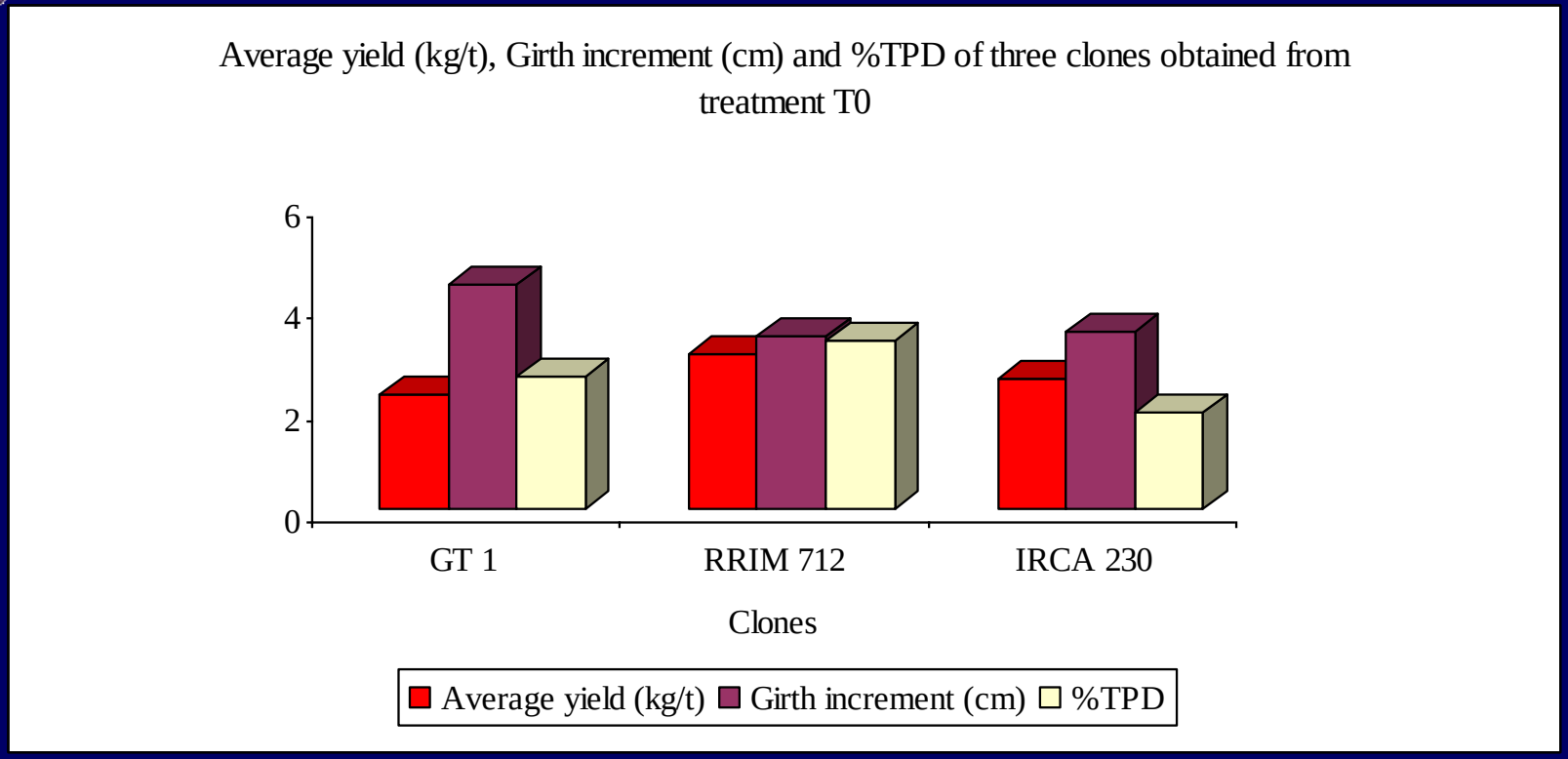
Average yield (g/t) of clone IRCA 230 increased with intensity of stimulation frequency



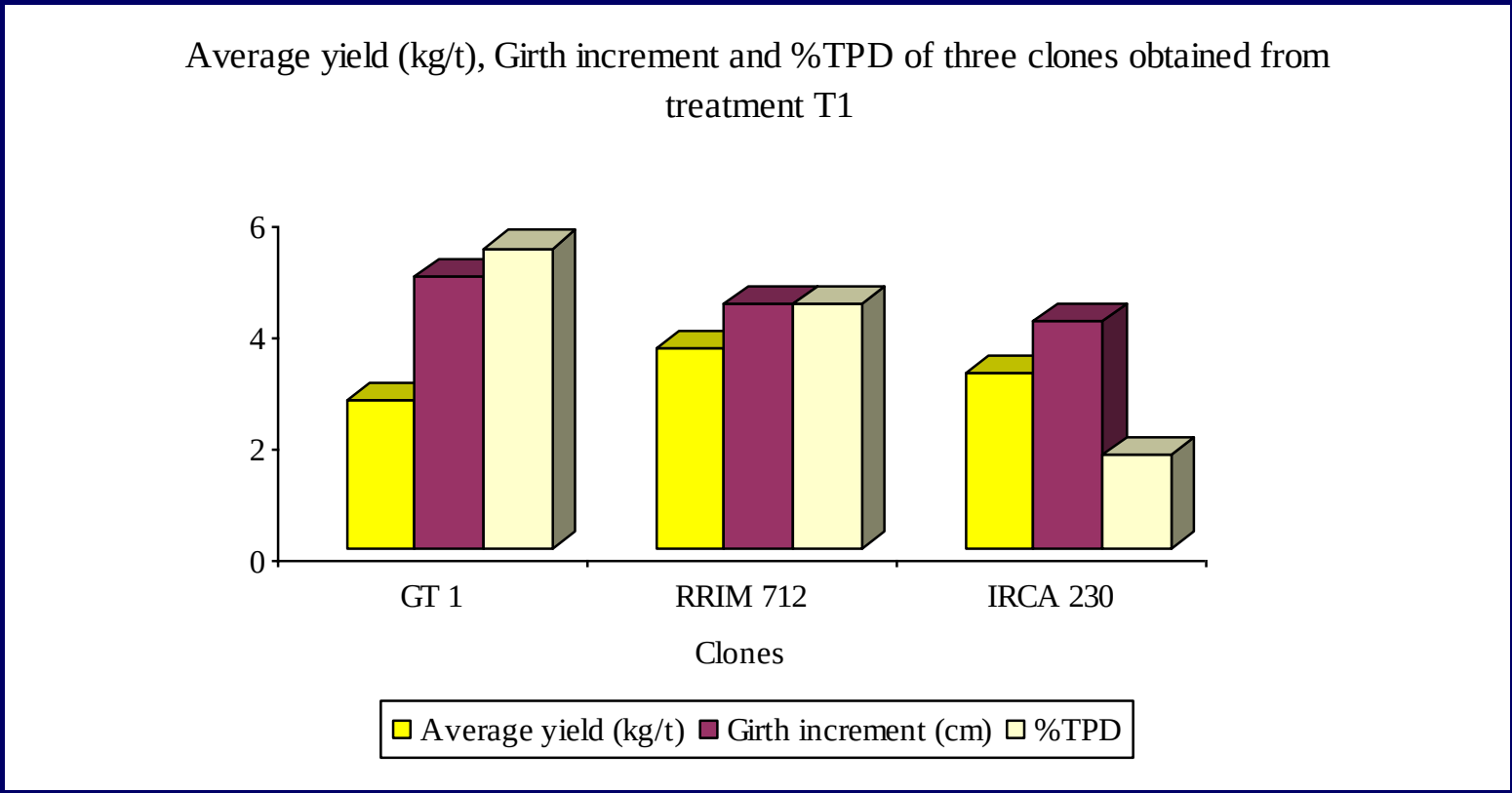
Yields (g/t) comparison of clone GT 1, RRIM 712 and IRCA 230 obtained from treatment T2 during the initial four years.



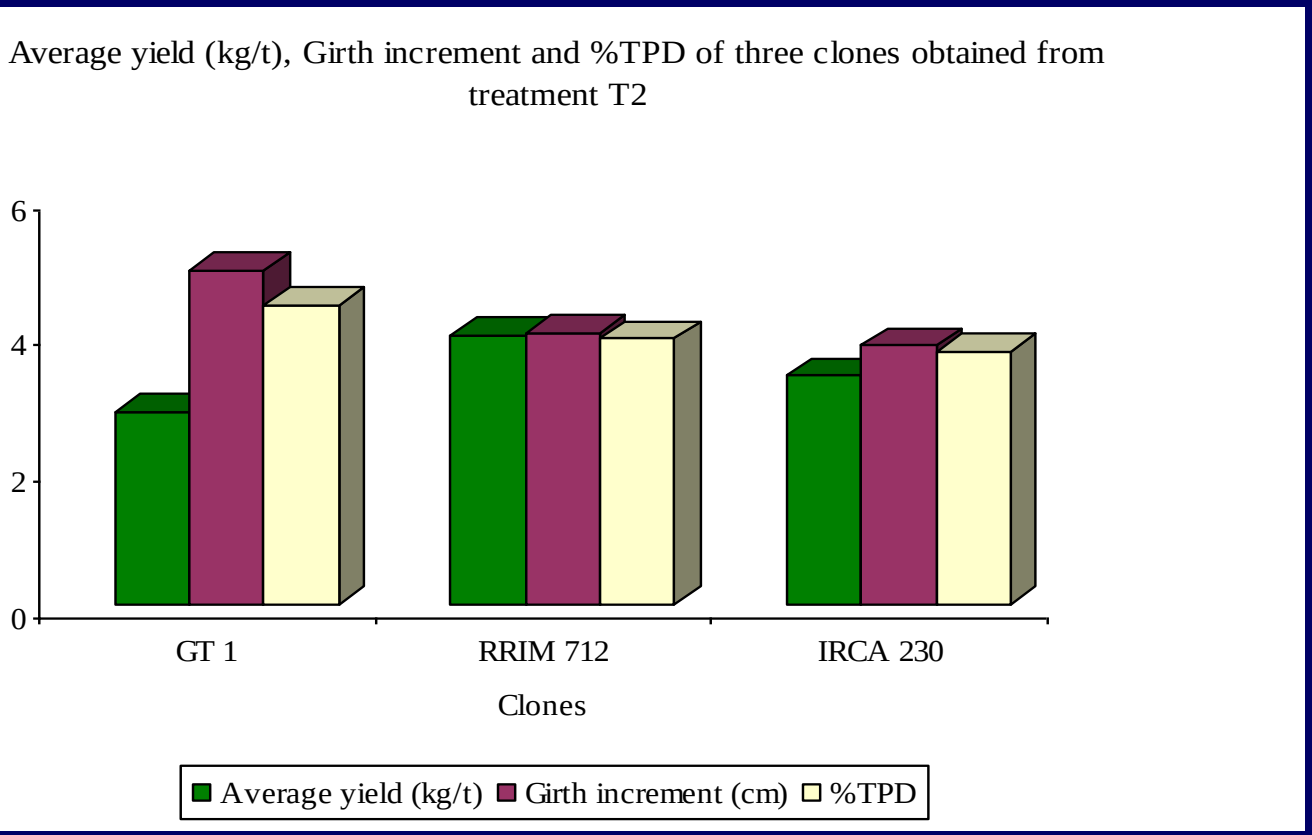
Average yield (g/t) comparison of clone GT 1, RRIM 712 and IRCA 230 obtained from treatment T2 during the initial four years of the experiment.



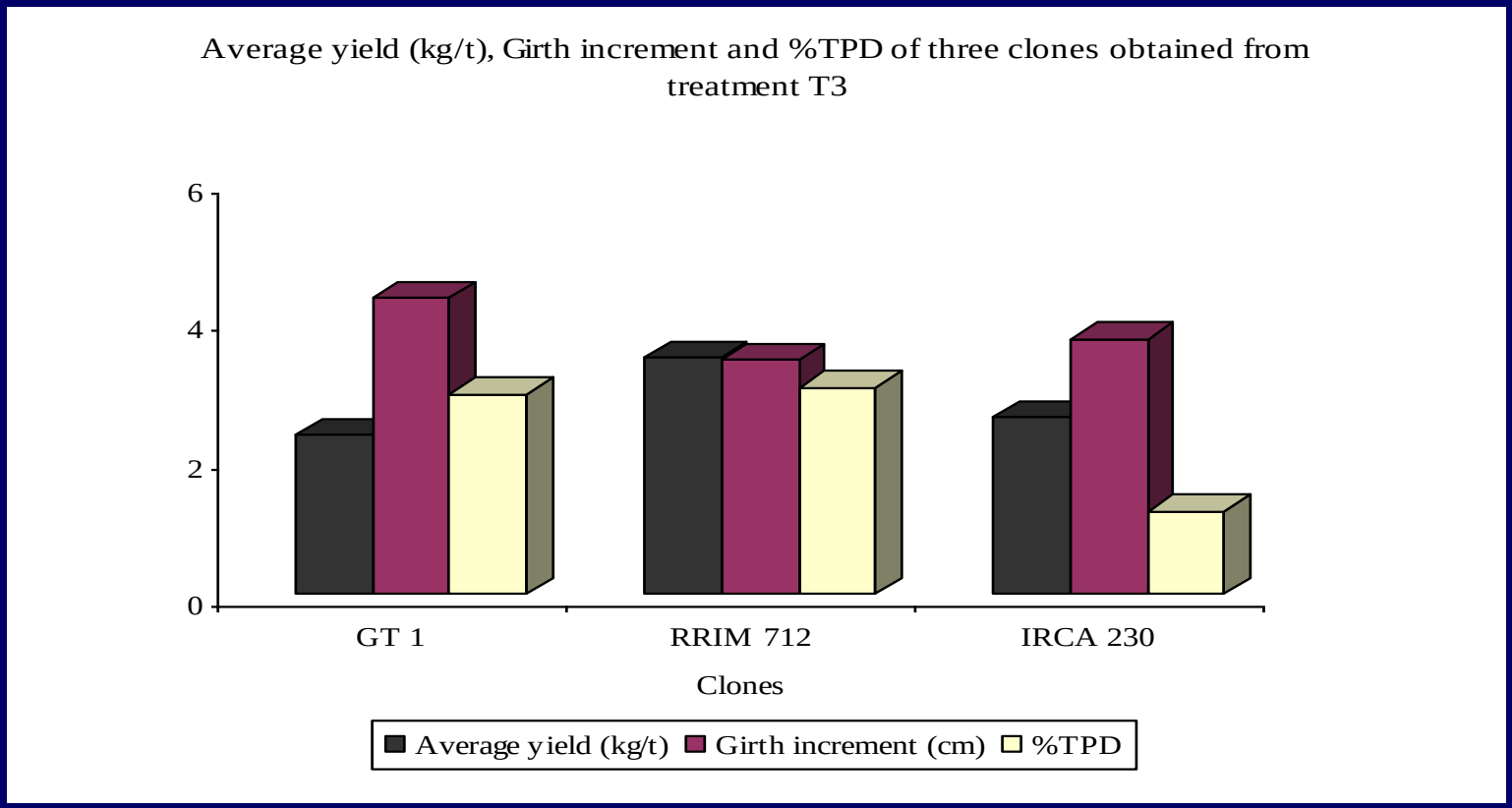
Effect of ethephon stimulation frequency on average yield, girth increment and %TPD of clone GT 1, RRIM 712 and IRCA 230 obtained from treatment T0: S/2 d4 7d/7 ET 2.5% Pa(1) 4/y during the initial four years from 2006 to 2010.



Effect of ethephon stimulation frequency on average yield, girth increment and %TPD in clone GT 1, RRIM 712 and IRCA 230 obtained from treatment T1: S/2 d4 7d/7 ET 2.5% Pa(1) 8/y during the initial four years from 2006 to 2010.



Effect of ethephon stimulation frequency on average yield, girth increment and %TPD of clone GT 1, RRIM 712 and IRCA 230 obtained from treatment T2: S/2 d4 7d/7 ET 2.5% Pa(1) 12/y during the initial four years from 2006 to 2010.



Effect of ethephon stimulation frequency and concentration on average yield, girth increment and %TPD in clone GT 1, RRIM 712 and IRCA 230 obtained from treatment T3: S/2 d4 7d/7 ET 3.3% Pa(1) 4/y during the initial four years from 2006 to 2010.

Conclusion

- High yielding clones are possible under S/2 d4 7d/7 frequency if higher frequency of stimulation are imposed.
- For medium yielding clone like GT 1, high stimulation per year can be applied without adverse effects.
- Productivity of all clones can be increased considerably by 8 to 12 stimulations per year under S/2 d4 7d/7 system of tapping.
- Yield stimulation under S/2 d4 7d/7 can be practiced in all clones (medium and high yielding) by 8 to 12 stimulations per years.
- Incidence of tapping panel dryness (TPD) is lower for clone IRCA 230 as compared to clones GT 1 and RRIM 712.

•Thank you